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December 21, 1998

Mr. Gerard J. Thibeault  
Executive Officer  
California Regional Water Quality Control Board  
Santa Ana Region  
3737 Main Street, Suite 500  
Riverside, California 92501-3339

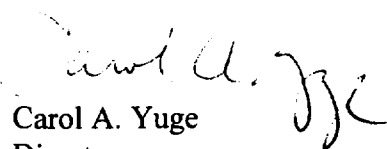
**Subject:      October 1998 Data Report  
                 Water Supply Contingency Plan  
                 Production Well Sampling Program  
                 Crafton-Redlands Plume Project**

Dear Mr. Thibeault:

In compliance with the approved Water Supply Contingency Plan, enclosed please find one copy of the **October 1998, Production Well Sampling Program** report prepared by HSI-Geotrans for the Lockheed Martin Corporation. This report presents analytical results from samples collected at Bunker Hill Basin Production Wells in October of 1998. Laboratory Quality Assurance/Quality Control documentation is in Attachment C which is also enclosed for your review.

Should you have any questions, comments, or requests, please contact Tom Blackman at (818) 847-0791 or John Hemmans at (818) 847-0191.

Sincerely,

  
Carol A. Yuge  
Director

Enclosures

cc:      See Attached Distribution List

**Distribution:**

cc: (Abbreviated Report Without Attachments "A, B, & C" Which are Available Upon Request)  
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# HSI GEOTRANS

A TETRA TECH COMPANY

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714-513-1415 FAX 714-513-1278

December 22, 1998

Lockheed Martin Corporation  
2550 N. Hollywood Way, 3<sup>rd</sup> Floor  
Burbank, California 91505

Attention: Mr. John Hemmans  
Project Coordinator

Subject: October 1998 Data Report  
Water Supply Contingency Plan  
Production Well Sampling Program  
Crafton-Redlands Plume Project

Dear Mr. Hemmans:

This report presents a summary of results of the Water Supply Contingency Plan production well sampling for the month of October 1998. The Water Supply Contingency Plan (WSCP) was prepared by Lockheed Martin Corporation and submitted to the State of California Regional Water Quality Control Board (RWQCB) Santa Ana Region on September 30, 1996. The plan was conditionally approved by the RWQCB in a letter dated March 6, 1997. The WSCP for the Crafton-Redlands Plume was prepared to address maintenance of water supply to purveyors in the event those wells become impacted with trichloroethene (TCE) from the Crafton-Redlands TCE Plume. A summary of key dates and WSCP sampling program evolution is provided on Table 1.

The locations of the 31 WSCP wells and analytical results for the October 1998 sampling event for TCE and perchlorate are shown on Figures 1 and 2, respectively. Table 2 presents a summary of analytical tests performed on each WSCP well and water system sampling point. The sampling frequency of each well is once a month for the first year. More frequent sampling, if required, is based on the analytical results as outlined in the WSCP TCE and perchlorate decision matrices, provided as Figures 3 and 4, respectively. The perchlorate decision matrix was presented in the *Perchlorate Work Plan and Schedule*, which was submitted, to the RWQCB on August 15, 1997. The RWQCB approved the Perchlorate Work Plan on

October 31, 1997. Table 3 presents a summary of the wells sampled twice monthly according to the decision matrices.

### ***SUMMARY OF SAMPLING EVENTS***

The City of Riverside Gage wells were sampled on October 1 and 2, 1998. The City of Riverside water system sampling points (Iowa Booster, Gage Delivery, 7<sup>th</sup> & Chicago, and Gage Arlington) were sampled on October 2 and 7, 1998. The four COLL wells (Mountain View #1, Mountain View #2, Richardson #1, and Richardson #2), the three COLL system sampling points (Mountain View Blend at Lawton, Mountain View Blend at Timoteo, and Richardson Blend), and the SCE#2 (AUX) well were sampled on October 1, 1998. Two City of Redlands wells (COR #38 and COR Orange Street) and the two Loma Linda University wells (Anderson #2 and #3) were sampled on October 5, 1998. Seven WSCP wells (Gage 29-3, Hunt #6, Hunt #10, Hunt #11, COR Church Street, COR Mentone Acres, and COR Rees) were not sampled in October because the wells were off-line.

The monthly sample collected from COLL Mountain View #2 on October 1, 1998, detected perchlorate at a concentration (23  $\mu\text{g/L}$ ) above the PAL. As per the perchlorate decision matrix, on October 5, 1998, a confirmation sample was collected from COLL Mountain View #2 (15  $\mu\text{g/L}$ ). Based on the October 1, 1998 perchlorate result (23  $\mu\text{g/L}$ ) and the October 5, 1998 perchlorate result (15  $\mu\text{g/L}$ ), Mountain View #2 was added to the list of wells to be sampled twice a month.

Mid-month WSCP sampling was conducted on October 15, 1998. Samples were collected from COLL Mountain View #2. Mid-month samples were not collected from Gage 29-2 nor Gage 29-3 because the wells were off-line. The mid-month sample collected from COLL Mountain View #2 on October 15, 1998 detected perchlorate at a concentration (28  $\mu\text{g/L}$ ) above the PAL. As per the perchlorate decision matrix, on October 22, 1998, a confirmation sample was collected from COLL Mountain View #2. Split samples were collected and sent to Babcock Laboratory in Riverside, California, and to the California Department of Health Services (DHS). Perchlorate results from Mountain View #2 were 34  $\mu\text{g/L}$  and 28  $\mu\text{g/L}$  from Del Mar and Babcock, respectively. Wells Gage 6 New and COLL Mountain View #1 have been removed from potable service and thus are no longer sampled on a twice a month basis.

According to the perchlorate decision matrix, wells sampled on a twice-monthly basis are evaluated after a period of three months. If the average perchlorate concentration for a well for that three-month period is below 75% of the PAL, the sampling of that well returns to once a month. The previous three-month period terminated in September 1998. Because the average concentration at Gage 92-1 was below 75% of the PAL, the well is now sampled on a once a month basis.

## **RESULTS**

A summary of the analytical results for the October 1998 WSCP sampling event for TCE and perchlorate is shown on Figures 1 and 2, respectively and presented on Table 4. Available groundwater elevation data measured by purveyor personnel is provided on Table 5. Chain-of-custody and laboratory data sheets are in Attachment B and Level III QA/QC documentation is in Attachment C. Appendices A, B, and C are available upon request.

### ***Trichloroethene***

Trichloroethene was detected at or above the detection limit of 0.5 µg/L in nine wells and two pipelines including; COLL Mountain View #1 (1.3 µg/L), COLL Mountain View #2 (1.1 µg/L), Gage 6 New (2.2 µg/L), Gage 26-1 (11 µg/L), Gage 27-1 (4.6 µg/L), Gage 27-2 (2.2 µg/L), Gage 29-2 (5.5 µg/L), Gage 31-1 (0.59 µg/L), Gage 92-1 (0.70 µg/L), the Gage Arlington (irrigation) sampling point (1.9 µg/L), and the Gage Delivery sampling point (1.4 µg/L), as shown on Figure 1 and Table 4.

Groundwater samples collected from the remaining WSCP wells and system sampling points including: eight Gage wells (Gage 29-1, Gage 30-1, Gage 46-1, Gage 51-1, Gage 56-1, Gage 66-1, Gage 92-2, and Gage 92-3), two COLL wells (Richardson #1 and Richardson #2), the SCE #2 (AUX) well, two City of Riverside water system sampling points (Iowa Booster and 7<sup>th</sup> & Chicago), and three City of Loma Linda sampling points (Mountain View Blend – Timoteo, Mountain View Blend – Lawton, and Richardson Blend) did not detect TCE. The trip blanks were also below the detection limit for TCE.

According to the TCE decision matrix (Figure 3), if a well meets or exceeds 2/5<sup>th</sup> of the MCL for TCE, and the TCE is a result of the Crafton-Redlands Plume, the well will be sampled on a twice-monthly basis. If a well meets or exceeds the MCL for TCE, and the TCE is a result of the Crafton-Redlands Plume, two confirmation samples will be collected within 48 hours and a temporary corrective action will be implemented. Five groundwater samples collected in October exceeded the MCL for TCE of 5.0 µg/L or 2/5<sup>th</sup> the MCL for TCE (2.0 µg/L). These wells are Gage 26-1 (11 µg/L), Gage 27-1 (4.6 µg/L), Gage 27-2 (2.2 µg/L), Gage 29-2 (5.5 µg/L), and Gage 6 New (2.2 µg/L). Based on the analytical history of these wells and the current understanding of the location of the Crafton-Redlands Plume, the TCE impacts observed at Gage 26-1, Gage 27-1, Gage 27-2, and Gage 29-2 appear to be the result of the Norton AFB Plume and not the Crafton-Redlands Plume. Thus, more frequent groundwater sampling of these wells for TCE will not be implemented at this time. Based on the analytical history and well construction of Gage 6 New, the TCE impacts observed may be partially a result of the Crafton-Redlands Plume. Currently, this well is not used for potable use and is only

sampled for monitoring purposes. Thus, more frequent groundwater sampling of Gage 6 New for TCE will not be implemented at this time.

### ***Perchlorate***

The perchlorate decision matrix states that if perchlorate is detected in any well at or above the PAL of 18 µg/L for the first time, two confirmation samples should be collected within 48 hours of receipt of results. If perchlorate is detected in any well at or above 75 percent of the PAL of 18 µg/L (i.e. 13.5 µg/L) for the first time, a confirmation sample should be collected during the next regularly scheduled sampling event. If the result is confirmed, the well will then be sampled on a twice-monthly basis for three months. At the conclusion of three months the average perchlorate concentration will be calculated. If the average concentration of perchlorate is below 75 percent of the perchlorate PAL (i.e., 13.5 µg/L) the well will be sampled once a month. If the average perchlorate concentration is greater than 75 percent of the perchlorate PAL, then, the well will continue to be sampled on a twice-monthly basis for another three months.

In October 1998, perchlorate was detected at or above the detection limit of 4 µg/L in three COLL wells (Mountain View #1, Mountain View #2, and Richardson #2) two COLL water system sampling points (Mountain View Blend at Lawton and Mountain View Blend at Timoteo), one Loma Linda University well (LLU Anderson #3), ten City of Riverside Gage wells (Gage 26-1, Gage 27-1, Gage 27-2, Gage 29-1, Gage 29-2, Gage 31-1, Gage 51-1, Gage 66-1, Gage 92-1, and Gage 6 New), two City of Riverside water system sampling points (Gage Delivery and 7<sup>th</sup> & Chicago), and an irrigation sampling point (Gage Arlington) as presented on Figure 2 and Table 4.

In the October WSCP sampling, perchlorate was detected at or above 75% (13.5 µg/L) of the PAL in five wells (COLL Mountain View #1, COLL Mountain View #2, Gage 29-2, Gage 51-1, and Gage 6 New). Gage 29-2 is currently being sampled on a twice-monthly basis when the well is on line. Gage 29-3 was off-line during October and not sampled.

Mountain View #1 and Gage 6 New are sampled only once a month for monitoring purposes because the wells are no longer used as potable sources of water. The October sample collected from Gage 51-1 detected perchlorate at a concentration that exceeded 75% of the PAL. In accordance with the perchlorate decision matrix, a confirmation sample will be collected from Gage 51-1 in November 1998. If the confirmation sample exceeds 75% (13.5 µg/L) of the PAL, Gage 51-1 will be sampled on a twice a month basis.

The monthly sample from COLL Mountain View #2 detected perchlorate at levels that triggered action per the perchlorate decision matrix (23 µg/L). A confirmation

sample was collected on October 5, 1998 from COLL Mountain View #2 and analyzed on a 24-hour rush turn around (15 µg/L). A mid-month sample was collected from Mountain View #2 on October 15, 1998 (28 µg/L). The October 15, 1998 results from Mountain View #2 exceeded the perchlorate PAL. A confirmation sample was collected on October 22, 1998 from Mountain View #2 and split between Del Mar Analytical, Babcock Laboratories, and the DHS for perchlorate analysis. Perchlorate results from the October 22, 1998 Del Mar and Babcock samples were 34 µg/L and 28 µg/L, respectively. Thus, because the perchlorate concentration in COLL Mountain View #2 was confirmed, Mountain View #2 will be sampled on a twice-monthly basis for three months. A blending plan for continued Mountain View #2 use has been approved by the DHS.

### **CLOSING**

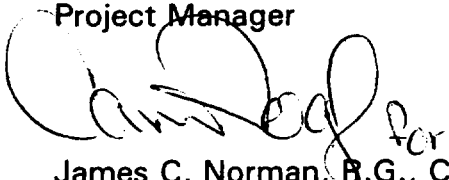
In November 1998, Lockheed Martin will continue to sample active WSCP wells in accordance to the WSCP sampling program. Twice monthly sampling for perchlorate will continue in November for wells Gage 29-2, Gage 29-3, and COLL Mountain View #2, if active. A confirmation sample will be collected from Gage 51-1 in November to determine if more frequent sampling for perchlorate is necessary.

HSI GeoTrans greatly appreciates being of continued service to Lockheed Martin Corporation on this project. Should you have any questions or comments, please do not hesitate to call.

Sincerely,  
**HSI GEOTRANS**



Roy J. Marroquin  
Project Manager



James C. Norman, B.G., C.HG.  
Project Director

## **TABLES**



**TABLE 1**

**KEY PROJECT DATES AND WSCP SAMPLING PROGRAM EVOLUTION**

<p>September 30, 1996, Lockheed Martin submitted the Water Supply Contingency Plan (WSCP) to the RWQCB – Santa Ana Region;</p>
<p>March 6, 1997, the RWQCB conditionally approved the WSCP, which included sampling eight production wells (City of Loma Linda Richardson #1, Richardson #2, Mountain View #1, Mountain View #2, Victoria Farms Mutual Water Company Wells #1 and #3, and Southern California Edison #1 and #2);</p>
<p>June 1997, Victoria Farms Mutual Water Company was connected to City of San Bernardino Water. Pumping ceased at VFMWC #1 and #3, and the two wells were removed from the program;</p>
<p>June 1997, sampling of SCE #1 was discontinued due to sampling logistics. The WSCP consists of five wells, including COLL Mountain View #1 and #2, COLL Richardson #1 and #2, and SCE #2 (AUX);</p>
<p>August 1997, the WSCP was expanded due to the detection of perchlorate in municipal supply wells in the Bunker Hill Basin. Twenty-six wells were added to the WSCP including nineteen City of Riverside wells, five City of Redlands wells, and two Loma Linda University wells, for a total of 31 wells;</p>
<p>October 1997, three City of Riverside water system sampling points were added to the WSCP, including the Gage system pipeline (Gage Delivery), the Waterman system pipeline (Iowa Booster), and the sampling station measuring outflow from the Linden and Evans Reservoirs (7<sup>th</sup> &amp; Chicago);</p>
<p>March 1998, two City of Loma Linda water system sampling points were added to the WSCP, including the Mountain View system pipeline (Mountain View Blend at Lawton) and the Richardson system pipeline (Richardson Blend);</p>
<p>June 1998, one City of Riverside irrigation water system sampling point (Gage Arlington) and one additional City of Loma Linda water system sampling point (Mountain View Blend at Timoteo) were added to the WSCP.</p>

TABLE 2

## WSCP PRODUCTION WELL SAMPLING PROGRAM

HSI#	Well Name	Perchlorate	TCE
City of Loma Linda			
691	Mountain View #1	X	X
692	Mountain View #2	X	X
693	Richardson #1	X	X
694	Richardson #2	X	X
City of Loma Linda Water System Sampling Points			
2967	Mountain View Blend - Lawton	X	X
3016	Mountain View - Timoteo	X	X
2968	Richardson Blend	X	X
Southern California Edison			
554	SCE#2(AUX)	X	X
Loma Linda University			
267	LLUniv Anderson #2	X	
717	LLUniv Anderson #3	X	
City of Riverside (Gage System)			
252	Gage#26-1	X	X
258	Gage#27-1	X	X
259	Gage#27-2	X	X
260	Gage#29-1	X	X
219	Gage#29-2	X	X
220	Gage#29-3	X	X
218	Gage#30-1	X	X
214	Gage#31-1	X	X
215	Gage#46-1	X	X
253	Gage#51-1	X	X
216	Gage#56-1	X	X
257	Gage#66-1	X	X
644	Gage#92-1	X	X
641	Gage#92-2	X	X
642	Gage#92-3	X	X
645	Gage 6New	X	X
City of Riverside (Waterman System)			
273	Hunt#6	X	
271	Hunt#10	X	
272	Hunt#11	X	
City of Riverside Water System Sampling Points			
2946	Iowa Booster (Waterman)	X	X
2947	Gage Delivery (Gage)	X	X
2948	7th & Chicago (Reservoir)	X	X
3018	Gage Arlington	X	X
City of Redlands			
542	COR Church St	X	
2673	COR#38	X	
535	COR Mentone Acres	X	
29	COR Orange st	X	
74	CORRees	X	X

## Notes:

TCE = Trichloroethene

Perchlorate analyzed using DHS Method (EPA 300.0 Modified)

TCE analyzed using EPA Method 502.2

TABLE 3

**WSCP PRODUCTION WELL SAMPLING PROGRAM  
OCTOBER 1998 WELLS SAMPLED TWICE MONTHLY**

<b>HSI#</b>	<b>Well Name</b>	<b>Perchlorate</b>	<b>TCE</b>
<b>City of Loma Linda</b>			
692	Mountain View #2	X	
<b>City of Riverside (Gage System)</b>			
219	Gage #29-2	X	
220	Gage #29-3	X	

Notes:

TCE = Trichloroethene

Perchlorate analyzed using DHS Method (EPA 300.0 Modified).

TCE analyzed using EPA Method 502.2.

Mountain View #1 and Gage 6 New are now sampled once a month for monitoring purposes because the wells are no longer used as potable wells.

**TABLE 4**  
**WSCP PRODUCTION WELL SAMPLING PROGRAM**  
**OCTOBER 1998 DATA RESULTS**

HSI#	Well Name	Sample Date	Perchlorate (ppb) Del Mar	TCE (ppb) Del Mar
<b>City of Loma Linda</b>				
691	Mountain View #1 <sup>a</sup>	10/1/98	29	1.3
691	MUN-716 <sup>a</sup>	10/1/98	NA	1.4
692	Mountain View #2	10/1/98	23	1.1
692	MUN-715	10/1/98	NA	1.1
692	Mountain View #2	10/5/98	15	NA
692	Mountain View #2	10/15/98	28	NA
692	MUN-719	10/15/98	27	NA
692	Mountain View #2	10/22/98	34	NA
692	Mountain View #2 - Split (BAB)	10/22/98	28	NA
693	Richardson #1	10/1/98	ND(4)	ND(0.5)
694	Richardson #2	10/1/98	6.8	ND(0.5)
694	MUN-714	10/1/98	5.0	NA
<b>City of Loma Linda Water System Sampling Points</b>				
2967	Mountain View Blend-Lawton	10/1/98	7.9	ND(0.5)
3016	Mountain View Blend-Timoteo	10/1/98	5.2	ND(0.5)
2968	Richardson Blend	10/1/98	ND(4)	ND(0.5)
2968	MUN-713	10/1/98	ND(4)	NA
<b>Southern California Edison</b>				
554	SCE#2(AUX)	10/1/98	ND(4)	ND(0.5)
<b>Loma Linda University</b>				
267	LLUniv Anderson #2	10/5/98	ND(4)	NA
717	LLUniv Anderson #3	10/5/98	6.6	NA
<b>City of Riverside (Gage System)</b>				
252	Gage#26-1	10/2/98	9.5	11
258	Gage#27-1	10/2/98	8.8	4.6
259	Gage#27-2	10/2/98	8.0	2.2
260	Gage#29-1	10/2/98	11	ND(0.5)
219	Gage#29-2	10/2/98	21	5.5
219	Gage 29-2*	NS	NS	NS
220	Gage#29-3	NS	NS	NS
220	Gage#29-3*	NS	NS	NS
218	Gage#30-1	10/2/98	ND(4)	ND(0.5)
214	Gage#31-1	10/2/98	4.4	0.59
215	Gage#46-1	10/1/98	ND(4)	ND(0.5)
253	Gage#51-1	10/2/98	14	ND(0.5)
216	Gage#56-1	10/1/98	ND(4)	ND(0.5)
257	Gage#66-1	10/2/98	13	ND(0.5)
644	Gage#92-1	10/2/98	9.6	0.70
641	Gage#92-2	10/2/98	ND(4)	ND(0.5)
642	Gage#92-3	10/2/98	ND(4)	ND(0.5)
645	Gage 6 New <sup>a</sup>	10/2/98	40	2.2
645	MUN-717 <sup>a</sup>	10/2/98	41	2.1
<b>City of Riverside (Waterman System)</b>				
273	Hunt#6	NS	NS	NA
271	Hunt#10	NS	NS	NA
272	Hunt#11	NS	NS	NA
<b>City of Riverside Water System Sampling Points</b>				
2946	Iowa Booster (Waterman)	10/2/98	ND(4)	ND(0.5)
2947	Gage Delivery (Gage)	10/2/98	6.7	1.4
2948	7th & Chicago (Reservoir)	10/2/98	4.6	ND(0.5)
3018	Gage Arlington	10/7/98	6.9	1.9
<b>City of Redlands</b>				
542	COR Church St	NS	NS	NA
2673	COR#38	10/5/98	ND(4)	NA
535	COR Mentone Acres	NS	NS	NA
29	COR Orange St	10/5/98	ND(4)	NA
29	MUN-718	10/5/98	ND(4)	NA
74	COR Rees	NS	NS	NS

**Notes:**

\* = Twice-monthly sampling result  
<sup>a</sup> = Well is not used for potable distribution  
 NA = Not analyzed for that compound  
 NS = Not sampled (Well off-line)  
 ND(4) = Not detected at the specified limit

MUN = Duplicate sample collected from the well listed directly above  
 TCE = Trichloroethene  
 DEL MAR = Del Mar Analytical Laboratory of Irvine, CA  
 Perchlorate analyzed using DHS Method (EPA 300.0 Modified)  
 TCE analyzed using EPA Method 502.2

TABLE 5

**SUMMARY OF WATER LEVEL MEASUREMENTS  
OCTOBER 1998 SAMPLING EVENT**

HSI#	Well Name	Measure Date	Depth to Water	Measuring Point Elevation	Groundwater Elevation	Comments
<b>CITY OF LOMA LINDA</b>						
691	Mountain View #1	NM	NM	1095	NM	Static
692	Mountain View #2	09/28/98	151	1085	934	Static
693	Richardson #1	09/28/98	140	1077	937	Static
694	Richardson #2	09/28/98	130	1078	948	Static
<b>Southern California Edison</b>						
554	SCE#2(AUX)	NM	NM	1100.00	NM	Pumping
<b>Loma Linda University</b>						
267	LLUniv Anderson #2	NM	NM	1075	NM	Pumping
717	LLUniv Anderson #3	NM	NM	1070	NM	Pumping
<b>City of Riverside (Gage System)</b>						
252	Gage#26-1	10/01/98	95.2	1045.33	950.13	Pumping
258	Gage#27-1	10/01/98	90.8	1044.64	953.84	Pumping
259	Gage#27-2	10/01/98	93.0	1044.64	951.64	Pumping
260	Gage#29-1	10/01/98	97.7	1044.43	946.73	Pumping
219	Gage#29-2	10/01/98	94.0	1046.31	952.31	Pumping
220	Gage#29-3	10/01/98	73.8	1048.75	974.95	Static
218	Gage#30-1	10/01/98	169.6	1054.17	884.57	Pumping
214	Gage#31-1	10/01/98	152.8	1054.64	901.84	Pumping
215	Gage#46-1	10/01/98	122.0	1065.50	943.50	Pumping
253	Gage#51-1	10/01/98	155.8	1044.64	888.84	Pumping
216	Gage#56-1	10/01/98	164.5	1065.50	901.00	Pumping
257	Gage#66-1	10/01/98	124.7	1044.85	920.15	Pumping
644	Gage#92-1	10/01/98	156.9	1047.78	890.88	Pumping
641	Gage#92-2	10/01/98	194.5	1053.38	858.88	Pumping
642	Gage#92-3	10/01/98	181.8	1058.78	876.98	Pumping
645	Gage 6 New	10/01/98	100.6	1067.70	967.10	Static
<b>City of Riverside (Waterman System)</b>						
273	Hunt#6	NM	NM	1015.5	NM	Pumping
271	Hunt#10	NM	NM	1017	NM	Pumping
272	Hunt#11	NM	NM	1015.7	NM	Pumping
<b>City of Redlands</b>						
542	COR Church St	Oct-98	92.0	1344.8	1252.80	Static
2673	COR#38	Oct-98	95.0	NA	NA	Pumping
535	COR Mentone Acres	Oct-98	146.0	1506.4	1360.40	Static
29	COR Orange st	Oct-98	137.0	1282	1145.00	Static
74	COR Rees	Oct-98	191.0	1490	1299.00	Static

**Notes:**

All measurements reported in feet below measuring point (ft-bmp)

Water level measurements for all City of Loma Linda, City of Riverside, and City of Redlands wells were obtained by purveyor personnel

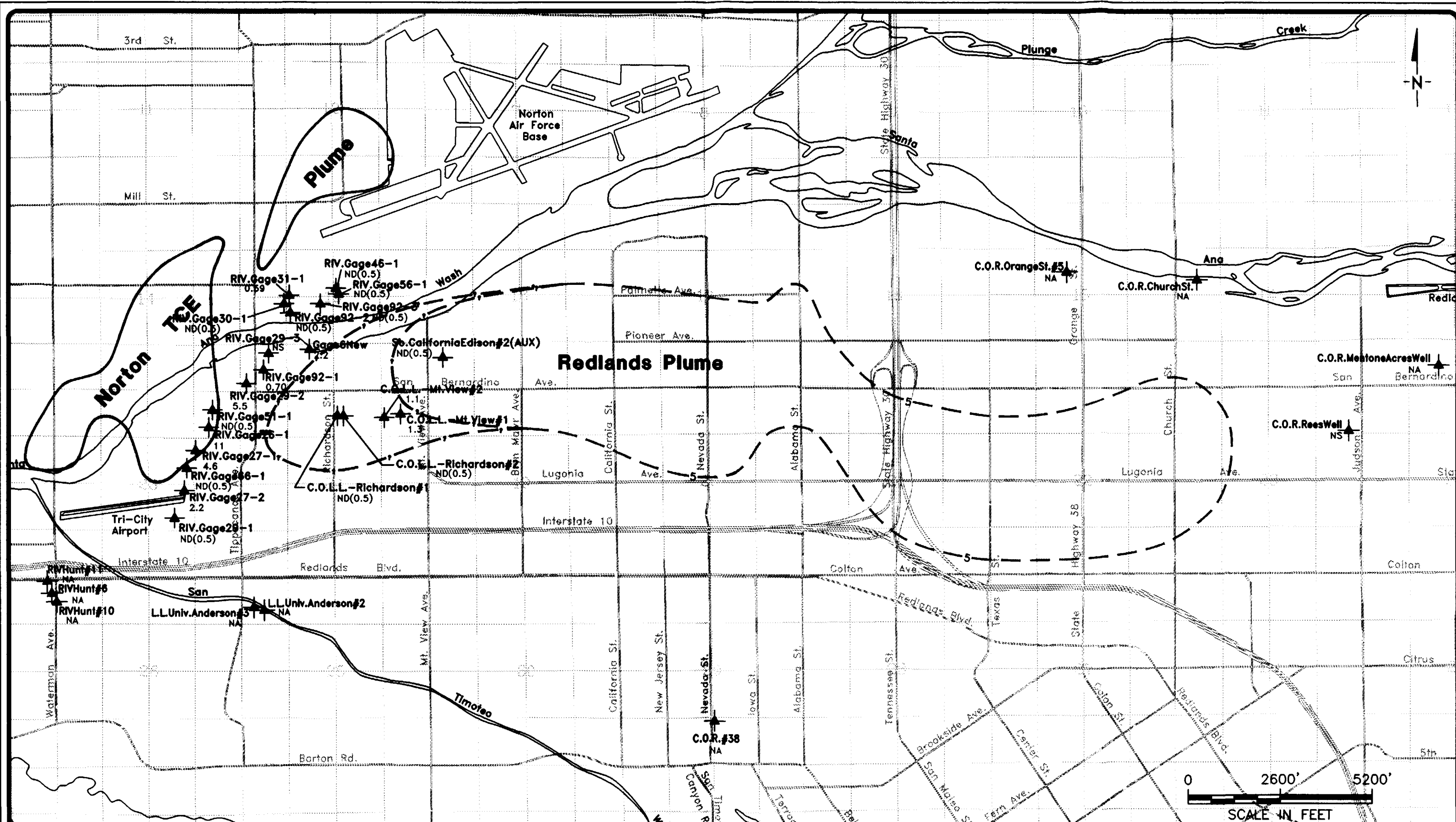
Elevations given in feet above mean sea level (ft-msl)

NM=Not measured

NA=Data not available

Static water levels were allowed to recover a minimum of 30 minutes to obtain a static water level measurement

## FIGURES



# EXPLANATION

Wells Currently Sampled Under the Existing WSCP Sampling Program

2.2 TCE Results (µg/L)

- Approximate TCE Plume Location 5 µg/L (1998 Interpretation of Redlands Plume)
- Approximate TCE Plume Location 5 µg/L (1998 Interpretation of Norton AFB Plume, by Norton)
- Projected 5 µg/L TCE Contour in Hydrostratigraphic Unit 2
- Projected 5 µg/L TCE Contour in Hydrostratigraphic Unit 4

ND(0.5) Not Detected at Indicated Detection Limit

NS Not Sampled

NA Not Analyzed

ND(0.5) C.O.L.L. Mountain View Blend at Lawton

ND(0.5) C.O.L.L. Mountain View Blend at Timoteo

ND(0.5) C.O.L.L. Richardson Blend

ND(0.5) Riv. Iowa Booster (Waterman)

1.4 Riv. Gage Delivery (Gage)

ND(0.5) Riv. 7th + Chicago (Reservoir)

1.9 Gage Arlington

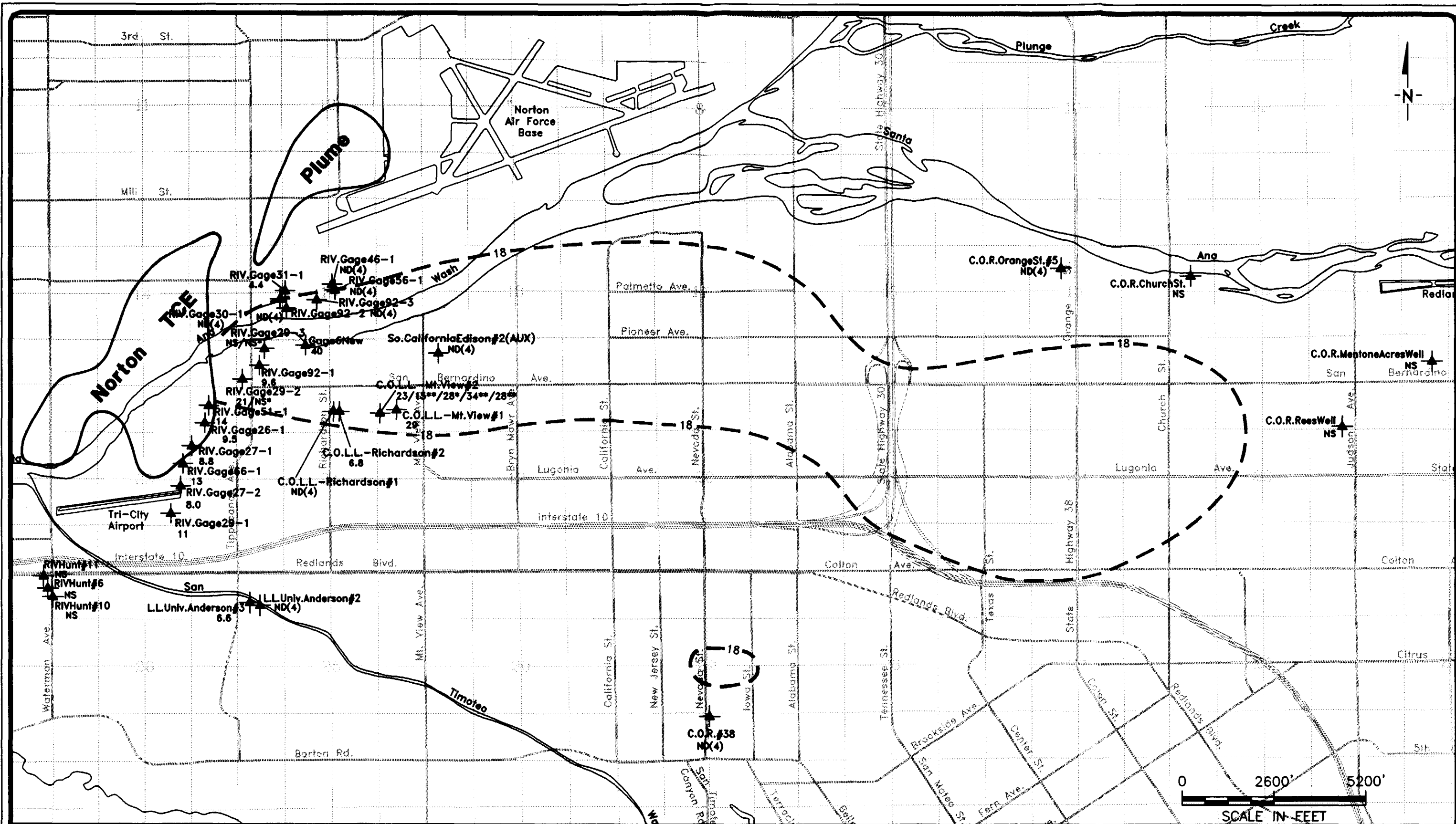
TITLE: WSCP Production Well Sampling Program  
TCE Data Results October 1998

LOCATION: LOCKHEED MARTIN  
REDLANDS, CALIFORNIA

HSI  
GEOTRANS  
A TETRA TECH COMPANY

CHECKED: Randy Kellerman  
DRAFTED: Hector Magaña  
PROJ.: N878-101  
DATE: 11/03/98

FIGURE:  
1



# EXPLANATION

- Wells Currently Sampled Under the Existing WSCP Sampling Program
- Approximate 18 µg/L Perchlorate Plume Location (1998 Interpretation)
- Approximate TCE Plume Location 5 µg/L (1998 Interpretation of Norton AFB Plume, by Norton)

- 6.6
Perchlorate (µg/L) Results
- ND(4)
Not Detected at Indicated Detection Limit
- NS
Not Sampled
- \*
Twice-Monthly Sampling Result
- \*\*
Confirmation Sample Result

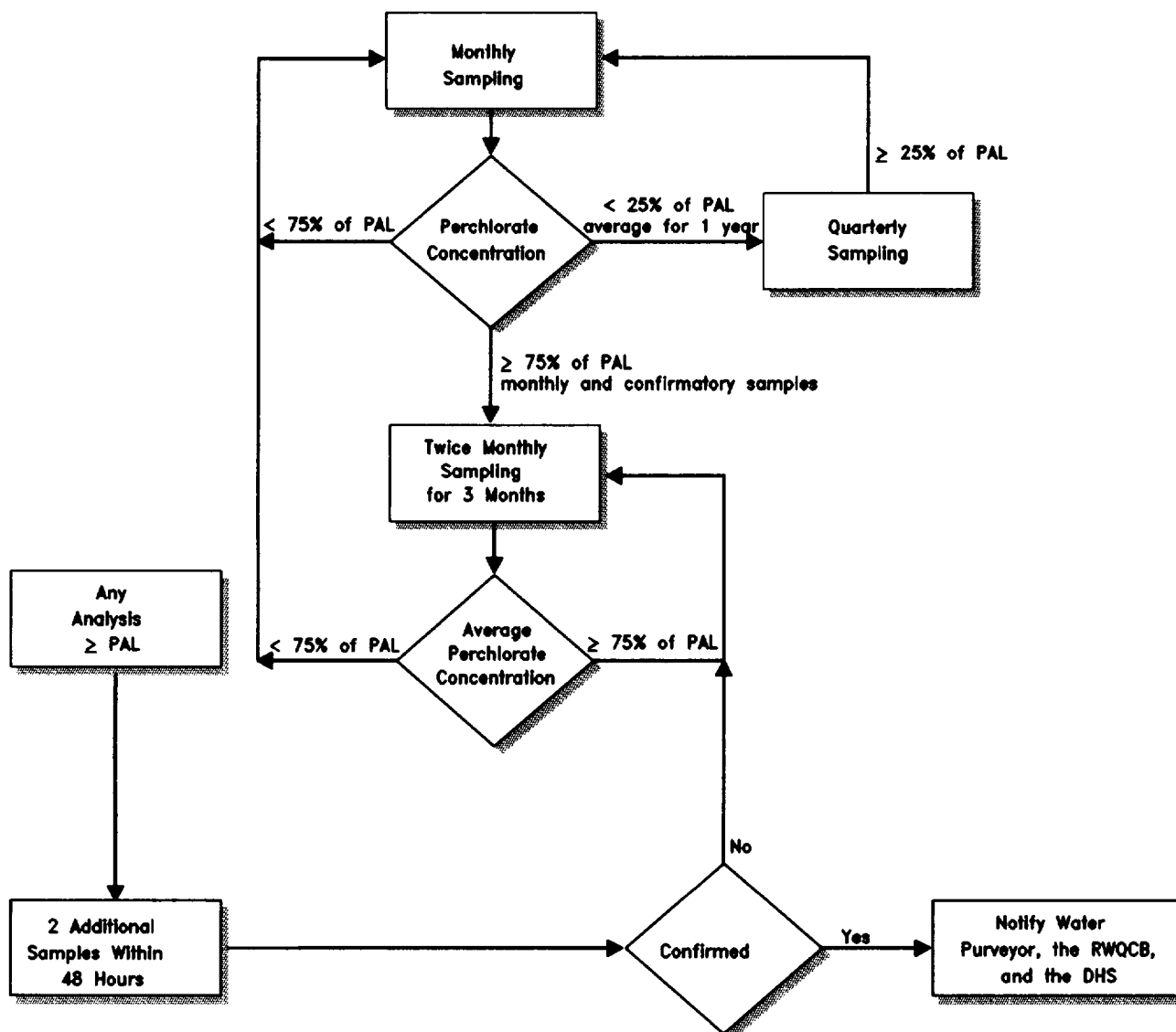
- 5.2
C.O.L.L. Mountain View Blend - Timoteo
- 7.9
C.O.L.L. Mountain View Blend - Lawton
- ND(4)
C.O.L.L. Richardson Blend
- ND(4)
Riv. Iowa Booster (Waterman)
- 6.7
Riv. Gage Delivery (Gage)
- 4.6
Riv. 7th + Chicago (Reservoir)
- 6.9
Gage Arlington

**TITLE:** WSCP Production Well Sampling Program  
Perchlorate Data Results October 1998

**LOCATION:** LOCKHEED MARTIN  
REDLANDS, CALIFORNIA

	CHECKED:	Randy Kellerman	<b>FIGURE:</b>  2
	DRAFTED:	Hector Magaña	
	DATE:	11/03/98	





**Footnote:**

Perchlorate Provisional Action Level (PAL) = 18 µg/L (California Department of Health Services, May 1997)

TITLE: Decision Matrix for Sampling Production Wells for Perchlorate

LOCATION: LOCKHEED MARTIN  
REDLANDS, CALIFORNIA

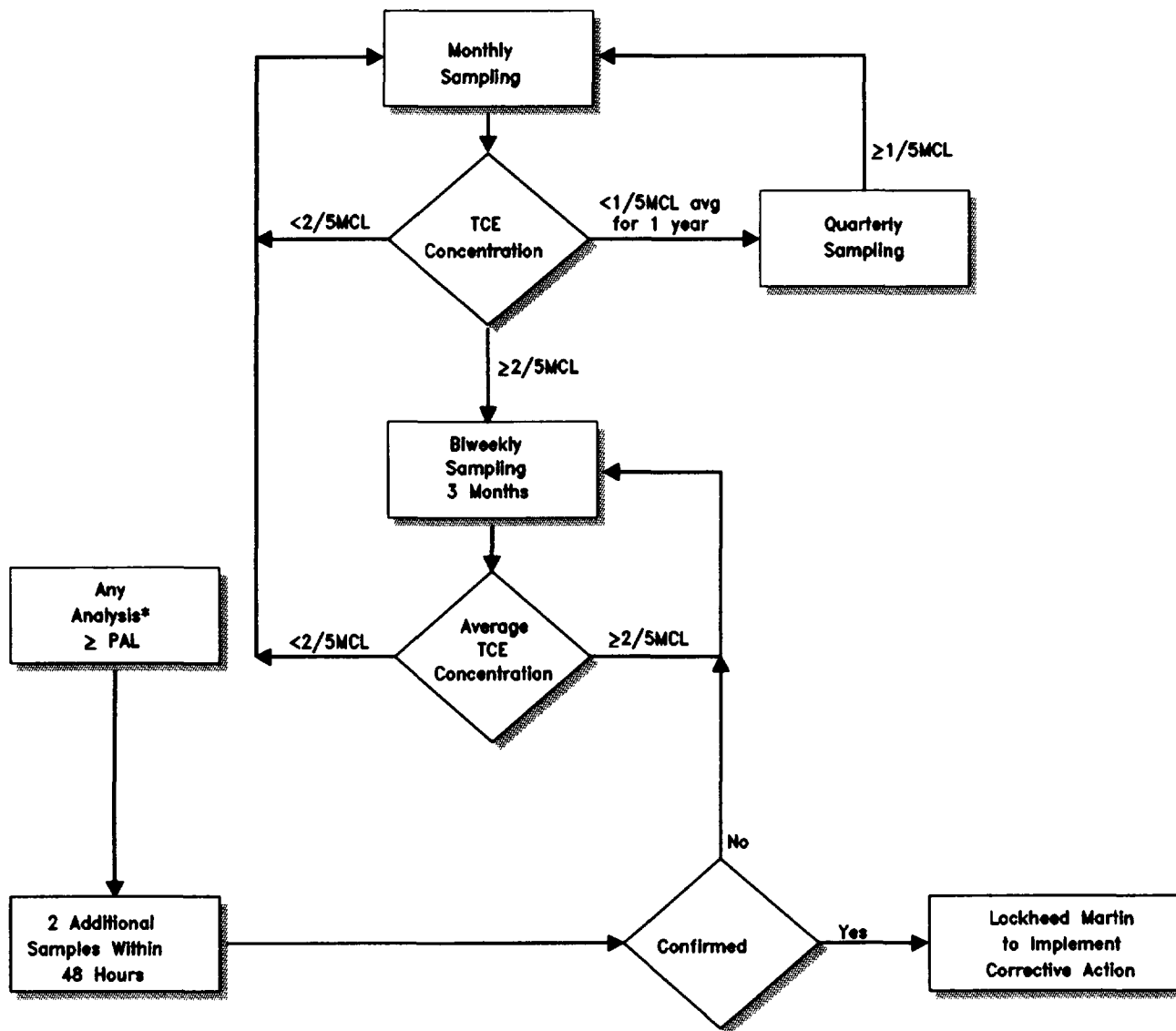


**HSI  
GEOTRANS**  
A TETRA TECH COMPANY

CHECKED: Ron Bruns  
DRAFTED: Hector Magaña  
PROJ.: N876-101  
DATE: 09/25/98

FIGURE:

3



**Footnote:**

\* If, at a specific well, blending is occurring to provide acceptable water for compounds other than TCE, then no corrective action may be necessary as long as the concentration of TCE is less than 5.0 µg/L in the finished water.

TCE MCL = 5 µg/l (California Regulations, Title 22, Division 4, Chapter 15, Section 64444)

TITLE: Decision Matrix for Sampling of Production Wells for TCE from the Crafton-Redlands Plume

LOCATION: LOCKHEED MARTIN  
REDLANDS, CALIFORNIA



**HSI  
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A TETRA TECH COMPANY

CHECKED:	Ron Bruns
DRAFTED:	Hector Magaña
PROJ.:	N876-101
DATE:	09/25/98

FIGURE:

4

**ATTACHMENT A**  
**GEOLIS FIELD FORMS**

**ATTACHMENT A**

**GEOLIS FIELD FORMS**  
**(Available Upon Request)**

**ATTACHMENT B**

**CHAIN-OF-CUSTODY RECORDS AND  
LABORATORY DATA SHEETS**

**ATTACHMENT B**

**CHAIN-OF-CUSTODY RECORDS AND  
LABORATORY DATA SHEETS**  
(Available Upon Request)

**ATTACHMENT C**

**LEVEL III  
QUALITY ASSURANCE/QUALITY CONTROL DOCUMENTATION**

**ATTACHMENT C**

**LEVEL III**

**QUALITY ASSURANCE/QUALITY CONTROL DOCUMENTATION**

**(Available Upon Request)**